REMARKS

Claims 1, 4-8, and 24-27 are pending in the instant application. Claims 1, 4-8, and 24-27 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 10-16 of copending Application No. 2005/0232864 (Clark et al.). Claims 1, 5-6, 25 and 27 stand rejected under 35 USC § 102 (b) as being anticipated by PINES et al. (WO 97/37239 A1). Claims 4, 24 and 26 stand rejected under 35 USC § 103 (a) as being unpatentable over PINES et al. (WO 97/37239 A1) in view of WANG et al. (US 2003/0008924 A1). The application has been amended. The claims have been amended. Specifically, Claim 1 has been amended to recite that the hyperpolarisation is carried out by dynamic nuclear polarization, as previously recited by Claim 5, now cancelled. Claim 1 has further been amended by limiting the probe compounds to compounds being enriched with at least ^{13}C or ^{15}N NMR active nuclei. Basis can be found in previous claims 4 and 24, now cancelled due to being redundant in view of amended claim 1. Previous claim 27 has been cancelled due to being redundant in view of amended claim 1 as well. Dependencies of claims 25 and 27 have been amended to provide proper dependency. Applicants respectfully submit that none of the amendments constitute new matter in contravention of 35 U.S.C. §132. Reconsideration is respectfully requested.

Claims 1, 4-8, and 24-27 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 10-16 of copending Application No. 2005/0232864 (Clark et al.). This rejection is

respectfully traversed.

In making this rejection, the Office states that the two claim sets ". . . are not patentably distinct from each other because they claim similar material." (Emphasis added). Applicants respectfully submit that this is not a proper basis for a nonstatutory obviousness-type double patenting rejection. As noted in paragraph 5 of the Office Action, a nonstatutory obviousness-type double patenting rejection is appropriate when the conflicting claims are either anticipated by, or would be obvious over, the reference claims. The Office then lists similarities between the claim sets before "concluding the claimed invention would have been obvious". Applicants respectfully submit that this is not a proper rejection of either novelty or obviousness. As regards independent claim 1 of the instant application, the Office has merely stated similarities without indicating a basis for why one of ordinary skill in the art would find the claims obvious in view of each other. In view of this failure to make a prima facie case, Applicants respectfully submit that the rejection is improper. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 1, 5-6, 25 and 27 stand rejected under 35 USC § 102 (b) as being anticipated by PINES et al. (WO 97/37239 A1). This rejection is respectfully traversed.

Applicants respectfully submit that the rejection stands obviated in view of the amendments which have been made to claim 1 hereinabove. That is, claim 1 now recites that the probe compounds as being enriched with at least ^{13}C or ^{15}N NMR active nuclei. Such compounds are – as the Examiner states on page 7 in item 11 of the communication

– not taught by PINES et al.

Furthermore, Applicants respectfully submit that the present invention is patentably distinct over PINES and WANG, either on their own or taken together.

PINES et al. teach a method of NMR or MRI wherein a hyperpolarized noble gas like ^{129}Xe may either is contacted with a sample, i.e. a compound containing NMR active nuclei, and said NMR active nuclei are detected by NMR and/or MRI. The sample is thus scanned to detect the effects of the hyperpolarized noble gas on the sample (see PINES et al, page 10, lines 20-21). By detecting these effects, one can analyze the structure, chemistry, spatial distribution, etc., of the sample (page 10, lines 25-27). In another embodiment, the hyperpolarization of the noble gas can be transferred to the sample, i.e. a compound containing NMR active nuclei, resulting in a hyperpolarized sample. The use of radiofrequency energy in a magnetic field is necessary to make this transfer happen (page 18, lines 30-35). The sample may contain ^{13}C or ^{15}N as NMR active nuclei.

WANG et al. discloses the labeling of protein samples for NMR studies with ^{13}C and/or ^{15}N in paragraph [0246].

By modifying the methods of PINES et al. according to the disclosure of WANG et al. one would arrive at a method wherein a hyperpolarized noble gas is brought into contact with a (protein) sample that is ^{13}C and/or ^{15}N-enriched. The hyperpolarization of the noble gas may be transferred from the hyperpolarized noble gas by use of radiofrequency energy in a magnetic field to the ^{13}C and/or ^{15}N-enriched sample,

resulting in a hyperpolarized sample. Hence by modifying the methods of PINES et al. according to the disclosure of WANG et al. one would not arrive at a method as claimed in claim 1. The method of claim 1 uses at least two ^{13}C and/or ^{15}N-enriched probe compounds which are hyperpolarized by DNP. Thus there is no need for 1) hyperpolarizing a noble gas and then 2) transferring the hyperpolarization from the noble gas to the probe compound, a process which is more complex and time consuming. Especially the time aspect is crucial since once established in a chemical entity, the hyperpolarization decays immediately (see PINES et al., page 3, lines 21-24).

Further, the method of the invention is used to study the influence of a potential drug on the *in vivo* activity of proteins, an important aspect in any drug-discovery process. In the method of the invention, a hyperpolarized mixture comprising at least 2 probe compounds are used which influence the activity of the protein concerned by being either a substrate, and inducer or an inhibitor. The protein activity is determined by NMR as described in claim 1. In a next step a hyperpolarized mixture comprising at least 2 probe compounds and a putative drug are used and protein activity is determined by NMR. The two obtained NMR data sets are compared and differences are identified which may be present due to said putative drug. Neither PINES et al. or WANG et al. describe or even hint towards such a method.

Thus the combined teachings of PINES et al. and WANG et al. do not disclose, teach, or suggest a method as claimed in claim 1 and dependent claims 6-8, 25 and 27. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 4, 24 and 26 stand rejected under 35 USC § 103 (a) as being unpatentable over PINES et al. (WO 97/37239 A1) in view of WANG et al. (US 2003/0008924 A1). Applicants respectfully submit that this rejection stands traversed due to the amendments and remarks hereinabove. Each of these claims has been canceled and incorporated into the independent claim 1 and the patentability of claim 1 has been demonstrated over these references. Reconsideration and withdrawal of the rejection are respectfully requested.

In view of the amendments and remarks hereinabove, Applicants respectfully submit that the instant application, including claims 1, 6-8, 25 and 27, is in condition for allowance. Favorable action thereon is respectfully requested.

Any questions with respect to the foregoing may be directed to Applicants' undersigned counsel at the telephone number below.

Respectfully submitted,

/Robert F. Chisholm/
Robert F. Chisholm
Reg. No. 39,939
Attorney for Applicants

GE Healthcare, Inc.
101 Carnegie Center
Princeton, NJ 08540
Phone (609) 514-6905